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A report of a three-day symposium concentrates on special problems of educating physicians and other health personnel in sparsely settled areas. Specific topics include: (1) present health and medical care in sparsely settled states; (2) education for health and medical service, (3) factors in medical school planning for sparsely settled areas, (4) single-state models for physician education, and (5) regional models for physician education. Conclusions indicate specific measures suggested by conference participants for the enhancement of the medical facilities of Idaho, Montana, Nevada, and Wyomong. (JM)

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# MEDICAL EDUCATION FOR SPARSELY SETTLED STATES

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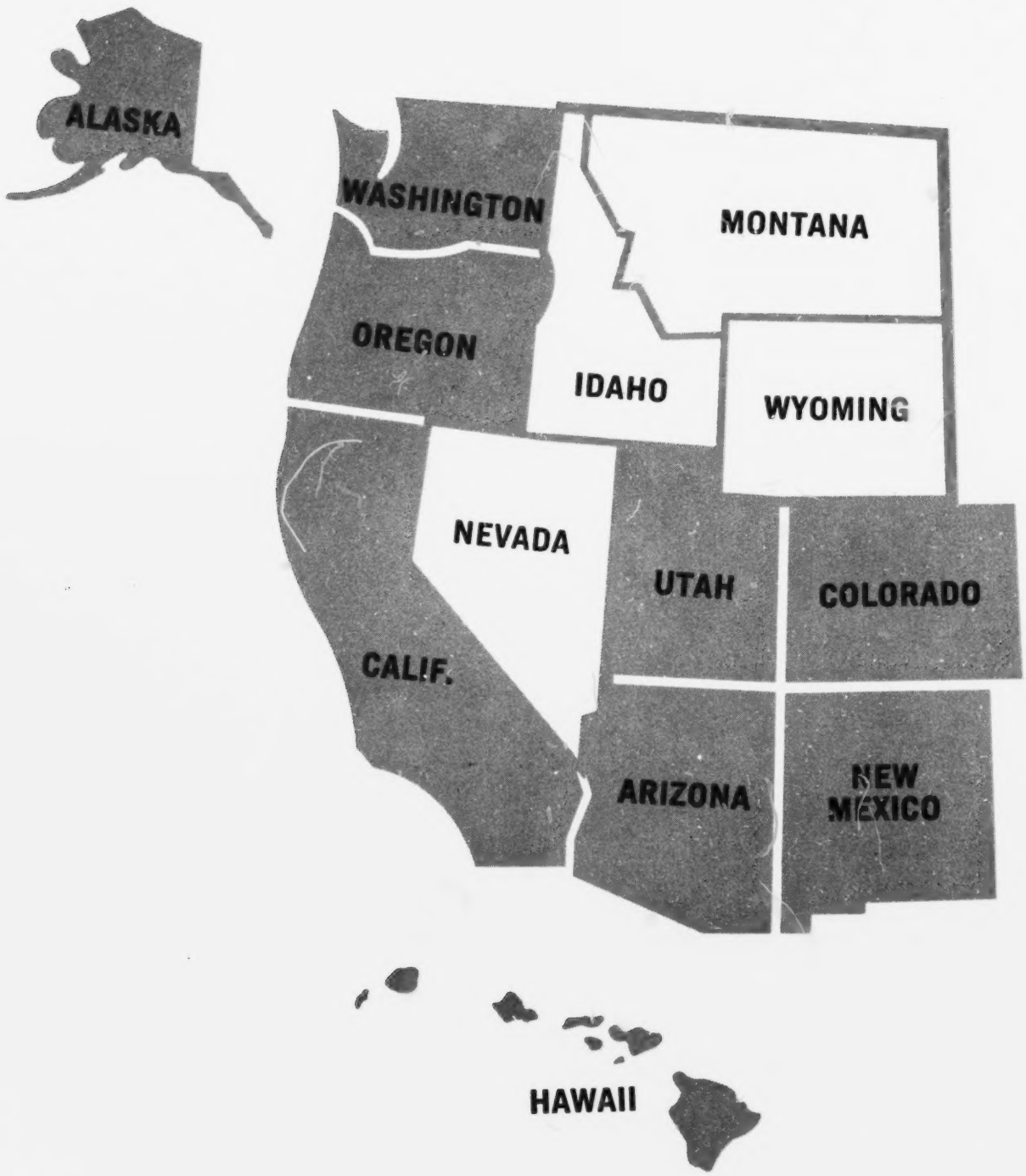
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# MEDICAL EDUCATION FOR SPARSELY SETTLED STATES

Report of a Symposium at Estes Park,
Colorado, September 28-30, 1967

Edited by
Kevin P. Bunnell
and
Julia V. Malone

This symposium, sponsored by WICHE, was supported by a grant from the Commonwealth Fund of New York.

Western Interstate Commission for Higher Education
University East Campus Boulder, Colorado 80302

April, 1968

# PREFACE

This is the report of a three-day symposium on the special problems of educating physicians and other health personnel in sparsely settled states. Meeting under WICHE sponsorship, a group of consultants from throughout the United States concluded that states which cannot afford conventional medical schools may be able to develop medical education facilities—if they are willing to experiment with new patterns of education and health care.

This report defines many problems and suggests some solutions. The people of those western states that lack medical schools will decide whether any of the ideas here can help them to develop the programs and facilities they need.

* * *

Most of WICHE's efforts to help increase the supply of physican manpower have been carried out with the financial assistance of the Commonwealth Fund of New York. This was true of the symposium reported here as well as of a 1959 report, *The West's Medical Manpower Needs*. This report revealed serious physician shortages in most of the western states, particularly in those without schools of medicine. In all states, opportunities to study medicine were found to be too limited. The report predicted that, with the passage of time, these two problems would grow.

Since 1959 the western states have kept these problems under review. Arizona, Hawaii, and New Mexico have established schools of medicine. The University of California has absorbed the College of Osteopathic Physicians and Surgeons as a medical school, has started new schools at San Diego and Davis, and is planning for more. All existing schools in the West are planning for expansion. All of this is good. But from the point of view of the states of Alaska, Idaho, Montana, Nevada, and Wyoming which have no medical schools, these developments only emphasize the widening gap between the "haves and the have-nots."

Four of these states joined in a two-year study of their potential in physician education. The major result of this effort, the Faulkner Report, *Opportunity for Medical Education in Idaho, Montana, Nevada, Wyoming*, was published in 1964. Because these states have small populations and large land areas, and because they have limited financial and educational resources, this report was not encouraging. The major recommendations were to expand the pre-existing medical student exchange program (to be encouraged by increasing the medical school payments to the level of actual costs and by doing away with the policy of requiring subsidized students to return to their home states to practice) and to keep the situation under constant study under a WICHE-appointed Advisory Council on Medical Education.

Since the publication of the Faulkner Report in 1964, there have been significant changes in the national medical establishment. Knowledge that can increase the effectiveness of medical care has been increasing at a faster and faster pace. Technologies that can contribute to improved storage, analysis, and communication of this knowledge are becoming more efficient. Many studies and reports under the auspices of government, the health professions, and organizations representing the consumer public have been published and are being widely read. Community, regional, and national planning for the improvement of health and medical care and for the education of related personnel is being supported by private foundations and by federal and state legislation. The Regional Medical Programs, programs for community-wide planning, Medicare, and assistance for health professions education are all potent forces for change.

In other words, since the Faulkner Report, there has developed a new climate for both medical care and medical education. Leaders in the four states felt that it was time to reconsider the medical education possibilities for their respective states. They asked the Western Interstate Commission for Higher Education to sponsor a conference to which would be invited a small, carefully selected group of consultants, who, after reviewing the socioeconomic structure and health and medical care needs of each state, would discuss ways they might circumvent or dissolve the obstacles to physician education within their borders.

The conference, called the "Symposium on Medical and Allied Health Education in Sparsely Settled States," was held on September 28-30, 1967, at the Harmony Guest Ranch, Estes Park, Colorado.

The consultants present were as follows:

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The following people attended from each of the four states:

Fred M. Anderson, M.D., Nevada
Frederick R. Bagley, Idaho
Francis A. Barrett, M.D., Wyoming
Frank L. McPhail, M.D., Montana
Alfred M. Popma, M.D., WICHE Regional Medical Programs
George T. Smith, M.D., Nevada

Members of the WICHE staff, Dr. Kevin P. Bunnell, director of Medical Education Programs, and Mrs. Julia Malone, staff assistant, were also present.

Prior to the meeting, the consultants received the 1959 report, *The West's Medical Manpower Needs*, the 1964 report, *Opportunity for Medical Education in Idaho, Montana, Nevada, Wyoming*, and other pertinent materials. Dr. Jack H. Gore, who had done the socioeconomic studies for Dr. Faulkner, was present, brought his data up-to-date, and remained to answer questions.

WICHE is grateful to all the symposium participants for their contributions to the substance of this report. Special thanks are due Dr. Ward Darley, who served as symposium chairman and who helped to shape the form and content of this report.

Boulder, Colorado
April, 1968

Robert H. Kroepsch
Executive Director
Western Interstate Commission
for Higher Education

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# ASSUMPTIONS AND CONCLUSIONS

## ASSUMPTIONS

In the fields of health and medicine, increases in knowledge, increases in the demands for and costs of service, and shortages of personnel are certain to persist. These problems must be met through better educational opportunities to increase health manpower and to increase the effectiveness of existing health personnel.

States without adequate medical education programs will have difficulty in attracting sufficient numbers of health personnel to serve local communities and in providing opportunity for students in the state to study medicine.

## CONCLUSIONS

### Sparsely Settled States Can Develop Medical Schools

The states of Idaho, Montana, Nevada, and Wyoming probably cannot afford individually full-scale medical educational programs. They can, however, develop medical schools by pooling and coordinating their academic and community hospital resources.

### Such Schools Must Reflect New Concepts in Medical Education

Educational programs for health personnel can be achieved through centralized planning, preparation of core curricula, and through the use of modern systems of communication. An emphasis must be placed on the team approach, general physician education, and community health care experiences.

Chapter I

# PRESENT HEALTH AND MEDICAL CARE IN SPARSELY SETTLED STATES

The term "health care," as used in this report, includes the prevention of disease and protection of health. Medical care is used to denote the diagnosis and treatment of disease. The all-inclusive phrase "health and medical care" will be used frequently because usually these two concepts must be considered together.

The symposium consultants considered it axiomatic that the maintenance of health and management of disease depend upon the proper education of those who will be responsible for these two functions. This report of their discussion focuses on education as the principal means for improving the status of health and medical care in the four sparsely settled states of Idaho, Montana, Nevada, and Wyoming.

## PUBLIC INTEREST IN HEALTH AND MEDICAL CARE

During the past few years, the public has been showing increasing concern for health and medical care. This has been the logical result of rising levels of education, knowledge, and economic growth. Now simple concern will be translated into demands for ready accessibility of comprehensive health and medical service. Along with this is the growing awareness of the need for medical resources that are complex, extensive, and expensive.

For these reasons, national and local energies have been directed toward the development of large medical centers so organized as to meet the health and medical demands of an expanding population. Most of these centers are in the metropolitan areas with broad enough population bases to provide two important resources: (1) sufficient tax revenues, or other dollar sources to support the medical centers, and (2) the number and variety of clinical patients needed to make efficient use of complex facilities.

## HEALTH AND MEDICAL CARE IN SPARSELY SETTLED STATES

States with low population density and widely separated small urban communities are not able to develop complex health care facilities like those in the metropolitan centers. These states cannot finance such facilities because their economies are characterized by narrow tax

bases and high per capita costs of public services. Idaho, Montana, Nevada, and Wyoming are examples of such states in the West.

The health care services of these four states are centered mainly in small urban communities. While the manpower resources in these communities for the most part may be adequate to meet urban needs, almost 50 percent of the state populations who reside in rural communities are not as well served.[1] Yet these people, too, want health services comparable to those available at large medical centers. The rural areas are often isolated from such centers by geography and inadequate systems of transportation and communications.

## INSUFFICIENT PERSONNEL

Maldistribution and shortage of health and medical personnel and services in these sparsely settled states have prompted medical educators to take a hard look at ways of meeting these problems. The health needs of these states must be met. The medical centers elsewhere in the United States are not producing enough physicians who are willing to settle in these sparsely populated areas. The graduates of these institutions tend toward highly specialized fields; they often prefer to practice in urban communities or large metropolitan centers where there is opportunity for extensive clinical casework, interaction with other specialists, and access to complex and expensive equipment.

## THE NEED FOR COMPREHENSIVE CARE

"Comprehensive care" is a phrase that is being heard with increasing frequency. In a series of papers that appeared in the June, 1967, issue of the *New England Journal of Medicine*, Darley and Somers, putting together two statements from different sources, offered the following definition:

> Comprehensive care is a system of person- and family-centered service, rendered by a well-balanced, well-organized core of professional, technical, and vocational personnel who, by using facilities and equipment that are physically and functionally related, can deliver effective service at a cost that is economically compatible with individual family, community, and national resources.
>
> There is nothing new or complicated in the concept. Basically, comprehensive medical care is the kind of compassionate, personalized, birth-to-death attention—preventive, advisory, and rehabilitative, as well as diagnostic and therapeutic—that the ideal family

physician used to give (and sometimes still gives), within the limits of his knowledge and facilities.

> What is new and complicated is adapting the concept to the uses of urban society and specialized skills; so that medical care does not become increasingly an episodic, impersonal, and even haphazard matter of a patient's shopping in bewilderment from specialist to specialist, none of whom may know the emotional and environmental problems interacting with his organic complaint. The aim should be to combine the concentrated knowledge and skills of the specialists with the broad understanding, wisdom, and continuing care of the generalist, to the end that the patient receives precisely as little or as much care as he requires.[2]

## THE FAMILY PHYSICIAN

The primary source of medical care in rural communities has been the general practitioner. However, because of rapid advances in the science of medicine, it has become increasingly difficult for this type of physician to keep his professional skills up-to-date. It is difficult, too, for the family physician to keep up with the increasing needs, let alone the demands of his patients. An adequate number of auxiliaries might be of help, but these, too, are in short supply. As a consequence, the need for more family physicians continues to grow.

These physicians are needed to help with the medical care of any population—urban as well as rural—but they are particularly needed in sparsely settled areas. Consultants in the highly technical aspects of health care can provide assistance when necessary, but for the most part the family physician is the one who *must* be equipped to provide continuing, comprehensive care for most of the people. To provide such care, the family physician must be well-trained in psychiatry, internal medicine, pediatrics, preventive medicine, and behavioral sciences. His medical versatility is vital to family health and medical care. But to be successful and to have time for study, rest, and family, his role must be well-supported by auxiliary personnel including nurses, technicians, and social workers, who are also specifically trained for continuing and comprehensive care that requires person-to-person relationships. Such allied personnel is seldom available in rural communities, and even the supply of family physicians is declining.

## ARE NEW MEDICAL SCHOOLS THE ANSWER?

If medical institutions outside of Idaho, Montana, Nevada, and Wyoming are not training the health personnel willing to practice in

sparsely settled states, can these states supply this need themselves? Perhaps. But financial and other limitations make it impossible for any one of these four states to develop a large teaching medical center similar to those in more populous states. In addition to sparse populations, these states have high per capita costs of government and moderately low per capita income. It is not realistic to impose the additional tax burdens necessary to finance complex medical educational facilities. This means that the states are powerless to help themselves unless new approaches to medical education and health and medical care can be found.

## COORDINATING EXISTING HEALTH PERSONNEL—THE TEAM APPROACH

Jo Eleanor Elliott, president of ANA and a WICHE staff member, stated that, "The development of a comprehensive medical care system will demand coordination of all allied health professionals." In the sparsely settled states, proper utilization and coordination of these health professionals can be achieved through a "team approach" to patient care. As the term implies, a team consists of health professionals who coordinate their roles to provide optimum patient care. The usual team may consist of the patient, a physician, a nurse, physical therapist, social worker, and special assistants, depending on the particular health problems involved. Each member must be able to define his role and abilities in conjunction with those of other team members and perform the tasks for which he is best qualified.

The consultants at this symposium agreed that effective and efficient health practice will require an understanding of the relevance of the team approach in all aspects of health and medical care—in the doctor's office, at clinics, in the patient's home, in hospitals, or through the use of other community facilities or services.

## TRENDS TOWARD REGIONALISM

At best, improving the quality of health care will be difficult for any of these states that try to do it alone. But health and medical manpower shortages are common to all four states, and coordination of efforts could result in a very favorable improvement. The Regional Medical Program and other new health-related programs are creating a climate within which the civic, professional, and governmental leadership can begin to plan for this kind of effort. Interested citizens in the four-state area are planning together to meet health manpower

needs. For the first time, the right people are coming together to talk about the right things. Already projections of population increases and of the related demands for service indicate that, unless cooperation and coordination take place, the health and medical care difficulties of these states will steadily increase. These states must find ways of doing better by building on the resources they already have.

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[1]Nevada is an exception to this figure with only about 25 percent of its population in rural areas.

[2]Ward Darley and Anne Somers, "Medicine, Money and Manpower—A Challenge to Professional Education," *New England Journal of Medicine*, June 1967.

## Chapter II

# EDUCATION FOR HEALTH AND MEDICAL SERVICE–CURRENT ISSUES

### THE TRADITIONAL CONCEPT

In the opinion of the symposium consultants, present-day medical education has not yet adjusted to the major emerging trends in health and medical care. Among these trends are the following:

1. The rapid advance of scientific knowledge.
2. The rise in the expectations of individuals concerning the quality and accessibility of health care.
3. The increasing ability of people to pay for health and medical care with a consequent increase in their demands.
4. The increasing application of technological advances and equipment.
5. The rapid rise in costs.
6. The increasing shortage in the supply of personnel.
7. The increasing trend toward specialization.

The consultants felt that the trend toward specialization has limited the ability of medical education to respond effectively to many of the changing needs and demands for care. For decades medical education has been highly departmentalized so as to conform to the patterns of specialization. Specialization is here to stay for it is the only way that a field as large as medicine can be broken down into learnable parts. But specialization has its limits because too often it narrowly confines the student in his medical orientation and blinds him and his teachers to major social and economic forces.

Departmental teaching is structured according to isolated disciplines with little or no interdisciplinary emphasis—an emphasis which is necessary for the integration and unification of the health sciences. One of the consultants drew an analogy between departmental teaching and forestry education. He said that teaching forestry in a lumber yard would give a student the same narrow exposure to the science of for-

estry that highly structured medical curricula now provide a student of medicine.

Vast amounts of new medical knowledge must be comprehensively incorporated into the total teaching system. To accomplish this, rigid departmentalization must be broken down. No discipline can isolate itself if medicine is to be taught as a unified whole.

The integration of knowledge must span not only the natural sciences, but the behavioral and social sciences as well. Only by relating all pertinent disciplines to the total process of maintaining human health and managing disease can medical schools become sufficiently responsive to society's needs.

## THE NEED FOR COORDINATION

The consultants asserted that increasing coordination must be an essential element in future medical education. They felt that three things were needed: (1) coordinated curricula designed for training physicians; (2) coordination of curricula for the training of physicians with the curricula for training non-physician health personnel; and (3) the coordination of these two curricula with the university curricula in the behavioral and social sciences. The first has already been discussed. The consultants also explained the other two aspects of coordination.

### *Physician and Non-physician Curricula*

Medical schools have a prime responsibility to support and encourage the coordination of physician education with the education of non-physician categories of health personnel. If this is done during the formative years of medical education, the same coordination is likely to be carried into the years of practice. This should provide optimal patient care by encouraging team relationships between general physicians, consultants, and necessary auxiliary personnel.

### *Health and University Curricula*

Coordination between medical school curricula and university curricula is also essential for successful education in the field of health and medicine. The interdependence among the natural, social, and clinical sciences is rapidly growing, and each of these disciplines has been

enriched by its involvement with the others. Thus a close relationship among the science departments of the university and its schools of clinical sciences is increasingly important.

The coordination of all aspects of health and medical education requires a restructuring of the medical curricula, including more interdepartmental orientation, if education for the efficient and effective delivery of health services is to become the common goal for all schools of medicine. But progress toward accomplishing this goal has been slow. This makes room for ventures in new kinds of education in new settings.

One of the symposium participants stated, "The major weakness in medical education has been the lack of a goal-objective. Medical education is still attempting to solve new problems with an organizational structure that is a holdover from the past."

Finding new organizational structures to solve the persistent old problems was the challenge to which the consultants felt these four states should soon address themselves.

Chapter III

# FACTORS IN MEDICAL SCHOOL PLANNING FOR SPARSELY SETTLED STATES

Areas without programs for the training of health and medical personnel are often characterized by inadequate health services: shortages in health manpower, maldistribution of existing personnel, and a shortage of medical facilities. The states of Idaho, Montana, Nevada, and Wyoming are experiencing such deficiencies in varying degrees.

In the opinion of the consultants, medical schools in these states could help to solve these problems. If these states are to consider an appropriate structure for medical instruction, the consultants stated that several factors must be considered.

## ECONOMIC AND GEOGRAPHIC FACTORS

*What economic variables must a sparsely settled state consider before making a large-scale commitment for a medical institution?*

To make a commitment for a medical school, a state must have substantial financing for both capital and operational costs. Tax revenues are obviously the major source. Of the 16 new medical schools under development, 14 are being sponsored and financed by state governments. But tax revenues in Idaho, Montana, Nevada, and Wyoming are limited because of their relatively small populations. As a consequence, their tax structures have precluded the development of training facilities for auxiliary health personnel, let alone the education of physicians. Whatever progress is made in the field of physician and other health personnel education will have to be done within these geographic and economic limitations.

Fringe benefits must also be considered when a state examines the feasibility of establishing training facilities for the health professions. This point was made by Lyman S. Rowell, president of the University of Vermont—an institution which maintains a medical school in spite of many obstacles similar to those the four states are facing. Mr. Rowell stated that, when discussing a medical school, "Unfavorable fiscal statistics can often be outweighed by favorable fringe benefits." As examples, Mr. Rowell said that the medical school (1) can be a major factor in future state growth by providing health services which would

otherwise not be available, (2) can serve as a source for physicians and allied health personnel, (3) can be the best source of continuing education for physicians, and (4) may help to attract industry to a state.

Another factor identified by the consultants is a reflection of geographic barriers and has economic implications, though it does not involve direct cash outlay. This is the maldistribution of all health and medical personnel—not just physicians.

Adequate numbers and proper distribution of personnel and facilities throughout the states could make health and medical services much more effective. The health and medical needs must be studied and judgments made regarding the quality and variety of needed personnel. With the proper information at hand, decisions can then be made regarding how educational facilities can be structured that will best meet the demonstrated needs. Several such background studies are now being done by the Mountain States Regional Medical Program.

## MEDICAL SCHOOL AND THE UNIVERSITY

*What should be the connection between a medical school and a university?*

The consultants agreed that any new medical school must have a close affiliation with an institution of higher learning. The states of Idaho, Montana, Nevada, and Wyoming already have universities capable of providing the umbrella for all the necessary resources. A university/medical school combination is important for several reasons. The science faculty of a medical school will be attracted to the university atmosphere by the prospect of interaction with university science staffs and a mature learning environment. This orientation should enhance the effectiveness of the basic science curricula and also help to increase the relevance of medical teaching to the social environment of practice.

## FUNCTIONS OF A MEDICAL SCHOOL

*What are the functions of a medical school?*

To dramatize the scope of medical education, Dr. Tschirgi, vice chancellor of academic planning, University of California at San

Diego, compiled a list of the functions most medical schools perform. He said:

> The ultimate function is to raise the standards of health and medical care—that's what medicine's all about! Medical schools do this in many ways. These include the following: (1) provide educational opportunities for students to study medicine; (2) train interns and residents who will become practicing physicians; (3) provide continuing medical education programs for practicing professionals; (4) produce biomedical scientists; (5) produce new knowledge through research; (6) increase the quality and quantity of other university science programs; and (7) offer prestige to the university and faculty, the community and local physicians.

In sparsely settled states the most relevant and most appropriate of these functions revolves around the provision of health and medical care. Therefore, these states must find some way of developing the health and medical training programs and facilities that will satisfy this particular function as well as supporting functions such as the study of ways and means of improving and broadening the delivery of patient care service.

## CLINICAL RESOURCES

*What clinical resources are necessary to support medical education?*

Community hospitals, clinics, nursing homes, and doctors' offices are the major clinical resources the states of Idaho, Montana, Nevada, and Wyoming have that can support medical education. These resources can be peculiarly important because they can provide medical students with exposure to and involvement in the process of continuing and comprehensive patient care—grass roots care where people live and work, where they stay well or become ill.

Contact with patients must not be episodic. The student of medicine, to have the best educational experience in comprehensive care, must be able to follow the patient through the entire experience of illness and recovery—observing the entire process, not just an isolated portion of it. This should involve student-patient exposure in many environments. If properly used, the clinical resources of these four states—resources that are already functioning—should be able to offer students a clinical experience that is ideally integrated in the interests of continuing comprehensive care.

## CURRICULUM DEVELOPMENT

*How can curriculum be adapted to the role of the medical school in the university?*

Medical education of the future must integrate the natural sciences not only with the clinical sciences but also with the behavioral and social sciences. Social science instruction is essential in the curriculum if there is to be a social orientation to medicine. Examples of such course content might be: (1) knowledge of the family unit; (2) population genetics; (3) social organization; (4) economics of health; (5) legal medicine; and (6) developmental psychology.

Science will always be the essence of medical education. But the recent and continuing explosion of knowledge has been such that no individual can master all of the knowledge that is applicable to medicine. Therefore, teaching should emphasize principles needed to understand the normal functioning of the body, its diseases, and the effects of treatment. If it is not possible to learn all the specifics, vital principles must be stressed. Teaching must also emphasize how to learn. New medical curricula must focus on these principles.

The consultants suggested the importance of interdisciplinary, core programs of basic science instruction, selected portions of which could be applicable for all professional health fields. These fields would include nursing, medicine, dentistry, veterinary medicine, and others. After completing this basic course work, each student would pass on to his specific field of study. Such an innovative approach to health education should help to do away with rivalry among health professionals.

## CRITICAL MASS

*What is the significance of the critical mass concept in medical education?*

Dr. John S. Millis, chancellor of Case Western Reserve University, introduced this concept at the symposium. He explained that, in medical education, critical mass is the minimum number of patients, the minimum amount of facilities, the minimum number of dollars, and the minimum number of faculty and students necessary to mount a successful training enterprise.

As an illustration, Dr. Millis explained that the rapid growth of research and the resulting increase in knowledge have created a need for larger numbers of faculty in every medical school department to perform essential teaching and research. For example, 20 years ago a medical school department of physiology could do its job with five faculty members; now the critical mass necessary for an effective, overall performance calls for many more.

## RESEARCH

*To what extent should a medical school in a sparsely settled state be research oriented?*

The scope and direction of research will depend on the philosophy of the medical school leadership and the ability of each school to finance appropriate faculty and facilities.

No medical school can recruit quality faculty without providing some opportunities for research. The consultants mentioned two guidelines for research involvement which might attract quality faculty to medical schools in sparsely settled states.

A faculty must be involved in the process of keeping up with existing knowledge and developments. An overriding emphasis on research, solely for its own sake, is not essential for a medical school that is primarily oriented to patient care. Yet there must be sufficient research to stimulate a faculty to keep up-to-date and avoid the use of obsolete concepts and knowledge. Aside from the usual "bench and bedside" research and the related opportunity to train advanced students, the consultants suggested that the logical research emphasis for medical schools in sparsely settled states would be in the area of patient care—the delivery and the evaluation of service in the community environment.

## CONTINUING EDUCATION FOR HEALTH AND MEDICAL SERVICES

*What role must continuing education play?*

Continuing education must be provided for physicians and allied health personnel so that they may keep their professional skills up-to-date. The learned professional cannot afford to let time lapse between

the development of new knowledge through research and the utilization of that knowledge in the care of his patients. This calls for participation in a continuous process of self-education.

Medical schools are the logical focal points from which programs of continuing education can blanket the health and medical practitioners in sparsely settled states. Since it is not always possible for professionals to leave their practices and return to a learning environment, methods should be developed by the medical schools to make this education readily available where the physician lives and works.

The consultants emphasized the following ways to provide continuing education for practicing health professionals:

1. Make maximum use of available films, tapes, video, and telephone lines.
2. Organize traveling educational programs to tour outlying areas.
3. Provide fellowships for physicians to leave their practices for six months to a year and undertake postgraduate training at a medical school.
4. Make optimum use of community hospitals as centers for continuing education.

Chapter IV

# SINGLE-STATE MODELS FOR PHYSICIAN EDUCATION

Large numbers of family physicians are essential to meet the health and medical care needs in sparsely settled states. Because medical schools are predominantly geared for training in clinical specialties, they produce very few such physicians. Of course, specialists are needed in these states, but there is a more critical demand for family physicians who can care for people in the environment of their own communities —long before most of them will require specialty services.

To begin with, the consultants considered several educational models that might be adapted to meet the health and medical manpower needs of sparsely settled states.

The models discussed first were the traditional four-year institution, the two-year basic science school, and the one-year program considered in the Faulkner Report.

## FOUR-YEAR MEDICAL SCHOOL

*Can a conventional four-year medical school fulfill the educational needs and health and medical demands of a sparsely settled state?*

The consultants said, "No." The conventional four-year school is oriented to clinical specialization rather than to the general health and medical care of patients. A specialized graduate of a traditional medical school may be reluctant to practice in a rural environment where there may be comparatively few specialized clinical cases for his attention. Resources, both financial and clinical, to support highly specialized medical education, are, at present, beyond the reach of any of the four states.

A conventional medical school should be affiliated with or near a university with strong Ph.D. programs in the basic sciences. None of the sparsely settled states as yet has such strength. If Idaho, Montana, Nevada, and Wyoming want to provide the complete span of opportunity in health and medical education, they must insure that their universities provide strong background in biology and sociology for prospective medical candidates. If such programs are not in existence,

there could be three consequences: the medical school endeavor would have weak scientific education; the medical school would be unable to offer the research opportunities that would attract competent faculty; and the medical profession might lose many well-qualified students to other scientific disciplines.

## TWO-YEAR MEDICAL SCHOOL

*Can a conventional two-year medical school fulfill the educational needs and health and medical demands of a sparsely settled state?*

The consultants said, "No." The rapid and extensive increases in medical knowledge are now such that most four-year medical schools are planning widely differing curricula that offer a four-year program with variations in continuity that increasingly preclude the acceptance of the classical two-year transfer. Furthermore, even if accepted, these transfers would finish their training within the arena of specialism, would select their internships and residencies accordingly, and, with few exceptions, would locate their practices in areas where population densities, purchasing power, and complex facilities could support such practice. For these reasons the conventional two-year medical school woud not be viable within the context of rising educational and health needs in the sparsely settled states.

Dr. Kenneth E. Penrod, the provost of the Indiana University Medical Center, offered a variation of a two-year program for the consideration of the consultants. Dr. Penrod called this the "middle school concept." Under this concept, the program would begin with high-quality graduate instruction in the basic sciences, some of which might even be offered in the senior year of college. The result would be the equivalent of the first year of medical school.

The next two years of education, the "middle school" period, would include educational involvement with patients under the tutelage of practicing physicians as well as full-time faculty. The fourth year would mark the beginning of what is now known as the intern-residency sequence and would take place in hospitals accredited for such purposes.

## ONE-YEAR MEDICAL SCIENCE PROGRAM

*Can a school offering just the first year of the medical curriculum help fulfill the educational needs and health and medical demands of sparsely settled states?*

The consultants answered with a qualified "No." This approach was one of the suggestions considered in the Faulkner Report; it is also suggested in Dr. Penrod's "middle school" approach. Although such programs would represent innovative approaches to medical education, they would not serve as long-range panaceas to meet the needs of the sparsely settled states.

The first-year medical science curriculum might be operated by an institution of higher education in each of the four states under a close cooperative arrangement with a nearby well-established four-year medical school. To assure the transferability of students at the end of this first year, the "sponsoring medical school" would have to play a role in planning the curriculum and the selection of faculty and students. Such an arrangement might be a prelude to a two-year medical school, but, as far as the four sparsely settled states are concerned, the drawbacks would be the same as those for the two-year and the "middle school" programs.

* * *

None of the above-mentioned educational programs would meet the diversity of health and medical needs of Idaho, Montana, Nevada, or Wyoming. The consultants felt the most appropriate approach to medical training would be through regional patterns of cooperation. They believed that regional patterns of education could be designed that would preserve the self-sufficiency in medical education of each state and still bring to bear the fullest advantages of interstate cooperation.

Chapter V

# REGIONAL MODELS FOR PHYSICIAN EDUCATION

Effective medical education in sparsely settled states will have to incorporate regional approaches to planning for educational programs and raising the quality of health and medical care needed to support these programs. The concept of regionalism implies not only that states will work together, but also that the communities within each state will be involved in the processes of health and medical education.

Several consultants proposed models for cooperation between schools and community health and medical care resources. The feeling prevailed that educational programs for all levels of health and medical personnel should be closely affiliated with the community hospitals and related facilities and services. Such affiliations would assure that all educational programs would be sensitive to social and community attitudes and needs. The students would have access to valuable educational experiences in the care of patients as they live in the settings of their own communities.

Given successful patterns of intercommunity cooperation, the consultants believed that all communities should meld their efforts so as to cover each state. Then, and only then, could cooperation on a multistate or regional level maximize the potential of each state's resources to provide education and training that could serve the health and medical care needs of all of its citizens.

Several concepts of such regionalism were presented at the symposium.

## INTERSTATE COOPERATION

Dr. William J. DeMaria from Duke University suggested that several existing medical schools in the West might form a consortium to establish a regional clinical training program for the sparsely settled states. The medical schools would admit qualified students from these states for training in the first two years of the science curriculum. The next two years of medical training would be in a well-developed clinical facility near an institution of higher learning in either Idaho, Montana, Nevada, or Wyoming.

At least four university medical schools in surrounding states would be needed to contribute to the pool of faculty talent for the clinical instruction. Each of the four schools that assume responsibility for an area of clinical training would send appropriate faculty to the regional training facility. Clinical areas would be divided up perhaps as follows: general medicine; gynecology, obstetrics, and pediatrics; general surgery; and psychiatry and preventive medicine.

The entire enterprise would be coordinated by a director and a committee representing each of the participating states and medical schools. The enterprise would be financially supported by a contract mechanism involving all participating institutions and states.

The representatives of the sparsely settled states pointed out that at least one important difficulty with this plan would be the legal restrictions which would prevent one state from contributing to capital investment in another. Another difficulty would be the location of the clinical training facility.

## DECENTRALIZED MEDICAL EDUCATION CENTER

Dr. Kenneth E. Penrod suggested an educational plan for these sparsely settled states which would provide a statewide or regional network of teaching centers so that medical education could be made available to medical students under conditions that would develop attractive internships and residencies in community hospitals of these states. The result would be to provide needed manpower to meet the health and medical needs of each state in an expedient and economical manner.

During the first year of medical education, the curriculum would be oriented toward the life sciences. The students should be able to receive this core science instruction at any state university offering high-quality graduate work in the human sciences (in or outside the four states). There would be close communication with, but not supervision by, the counterpart departments at a medical school that would be established in one of the participating states and operated under much the same plan suggested by Dr. DeMaria. This phase would be, in effect, a one-year medical science curriculum such as was considered in the Faulkner Report.

The second and third years would have to be taken at the medical school where the students would take part in intensive instruction by

career academicians. This instruction would relate the life sciences to clinical medicine.

The fourth year, as well as the intern and residency years, would involve qualified community hospitals located in the participating states. Each community hospital and medical school would be interconnected with an electronic network consisting of audiovisual and computer components. In an effort to prevent information obsolescence, the medical school would disseminate scientific and clinical data throughout the participating states to provide high-quality instruction for faculties and hospital staffs as well as students. With the actual service programs of the participating states being used as frameworks for instruction, it would be expected that many, if not most, of these students would remain in their respective or similar states to practice.

Dr. Penrod stated that many aspects of this concept of decentralization through communications are developing in Indiana under the aegis of the university medical school. Already the results indicate that the program is enabling many people to be exposed to and involved in quality community-centered medical education. While Indiana is a densely populated state, the same results should be possible in states such as Idaho, Montana, Nevada, and Wyoming.

## COMMUNITY LABORATORIES

Dr. Andrew D. Hunt, Jr., dean of the College of Human Medicine at Michigan State University, described his institution's community laboratory program. The goal of the program is to relate the medical school effectively to community health and medical needs.

The program enables medical students to work directly in community health care facilities while remaining under the auspices of the medical school. These experiences enable students and faculty to join in the investigation of new and more efficient ways of utilizing personnel and technology in bringing medical care to the patient. Students can learn to work with patients in a "real life" community environment while studying the roles and responsibilities of physicians as they differ between communities.

The community laboratory program as developed in the metropolitan areas around Lansing, Michigan, involves medical school coordination, not only with hospitals and practicing physicians but also with the

entire range of community and governmental agencies related to the delivery of health services.

Academic preparation for the community laboratory experience includes courses such as: medicine and society; world population problems; role of the general practitioner; government and medical care. The courses involving social issues and medicine help the student gain perspective and understanding of the professional career choice he has made.

Another facet of the community clinical experience is particularly relevant to sparsely settled states—the emphasis on rural health services. Medical students of Michigan State University will participate in summer projects in small communities in the Upper Michigan Peninsula where they will study rural health structure and work with local physicians in giving health care. It is hoped that, through such an experience, many of the students after graduation will be attracted to careers in these sparsely settled communities.

Dr. Hunt said that in the near future more rural and urban community hospitals will be involved in health profession education. It is probable that similar involvement in the sparsely settled states could contribute substantially to improving each state's own health services.

## UMBRELLA CONCEPT OF COMMUNITY HEALTH CARE

Dr. James L. Dennis, director and dean of the University of Oklahoma Medical Center, described Oklahoma's approach to the problems of education for improved patient care. A survey of health care in Oklahoma revealed that this state shares many of the problems of personnel shortages and distribution that are prevalent in Idaho, Montana, Nevada, and Wyoming. Not only is there a shortage of physicians, but also of dentists, nurses, physical therapists, all categories of technologists, hospital administrators, social workers, and all other kinds of auxiliary health and medical personnel.

The University of Oklahoma Medical Center has responded to the health needs of the state by initiating a plan calling for cooperation of all health agencies. An investigation of this plan should be helpful to any state that will require coordination of all of the health and medical professionals and agencies if all of its people are to have access to optimal health service.

According to the Oklahoma plan, the multi-institution endeavor would, in effect, make a functional "medical institution" out of the many organizations in the Oklahoma City area that have diverse health and medical orientations. Examples of such organizations are the societies of practicing professionals; community hospitals; cancer, heart, and other volunteer health agencies; the state and federal health agencies; public health departments; and other related institutions including extended care facilities and nursing homes.

The university medical center serves to mobilize the efforts of all these agencies by providing leadership for the coordination of health services and by coordinating the education of various health professionals.

According to Dr. Dennis, the university medical center discharges this leadership role (1) by preventing obsolescence in trained health personnel by planning continuity in the transmission of new knowledge and technology to the state communities; (2) by evolving pilot programs concerned with the exploration of improved methods for the delivery of health care and the development of health manpower; and (3) by helping the private and public sectors of the health and medical professions to cooperate in providing comprehensive community health care and opportunities for related education.

To initiate this operation, the university brought together a group of influential citizens representing every section of the state to lay the groundwork for the necessary coordination. This group agreed to create a multi-institutional corporation now called the "Oklahoma Health Science Foundation."

The goals of the Foundation are to assist private and public institutions and agencies related to any facet of public health, patient care, health science education, or research, in clustering their facilities close to the University of Oklahoma Medical Center. The proximity of all of these agencies encourages a "unity of diversity" in efforts to meet the health science manpower needs of the people in Oklahoma.

All of the institutions involved in this endeavor are sharing facilities and personnel, and this is resulting in the reduction of both capital and operating expenditures.

An operations committee handles all inter-institutional affairs. Members of the committee are the administrative heads of each participating institution and agency. The director of the operations committee is a member of the medical center administration. However, in determining policy and instructional procedures, he is identified with the entire community—not with the university. The operations committee coordinates and plans all phases of joint health care programs. Once the committee reaches policy consensus, the individual members take the committee recommendations to their respective governing boards and to the Oklahoma Health Science Foundation for final approval.

Before such a concept could be initiated in any state, or between states, all participating institutions and agencies must be willing to pool and dedicate their respective resources and energies to improve the entire health education and service establishments.

## INTERSTATE EDUCATIONAL PROGRAM FOR HEALTH SERVICES

Dr. Ward Darley, visiting professor of medicine and preventive medicine at the University of Colorado, and also chairman of the symposium, outlined a proposal that encompassed many of the above suggestions and which he believed would be legally acceptable and within the reach of all of the four states.

Dr. Darley suggested that Idaho, Montana, Nevada, and Wyoming could each develop a school of medicine which, by using already existing community hospitals and resources, could provide for the complete span of education for general family or primary physicians.

To accomplish this the following steps were suggested:

1. Each state would select an institution of higher education that would operate its school of medicine. The first two years of the school would be located on campus. The second two years, plus internships and residencies in general medicine, would operate in affiliated community hospitals.

2. Each of these educational institutions would select an appropriate individual to be the state's principal representative on a regional or central committee. This committee, through the proper use of staff, consultants, and subcommittees, would determine the objectives and plan the curricula that each of the medical schools could use in common.

3. The central committee would also recommend the criteria that would govern the appointment and training of faculty, the establishment of hospital affiliations, the selection of students, and the progression of each student from one level of education to another.

All of this would be done so that the curricula and methods of teaching could be modified or amplified by those in the participating medical schools and community hospitals who would be providing the direct supervision for each level of each program. This would mean that, while the schools would be sharing curricular and faculty resources through centralized planning, each would still provide for face-to-face teaching and learning in the classrooms and laboratories of the campuses and the affiliated hospitals.

The principal ingredient of the proposal is that central planning would develop curricular content and related teaching methods and visual aids that could be used in common by all health and medical education programs in each participating state. This would permit each state to conduct viable and successful educational programs with fewer new facilities, fewer administrators, smaller faculties, and less expense than would otherwise be the case. Each state would be in a position to select those activities that it would perform for itself and those that it would share with others. Even a state that did not wish to establish a program in undergraduate medicine might find portions of the total program that it could use in developing internships, residencies, and programs in continuing education.

Planning for medical schools and intern and resident training does not come within the scope of the Regional Medical or the Partnership for Health Programs. Yet these two programs plus programs in undergraduate and intern and resident education would mutually support one another. This would be particularly true if all three could share in an adequate system of communications—a system that would use long distance telephone and teletype, films and tapes, the automobile and airplane, the mails, and open circuit television as they are today. Eventually a widespread installation of terminals could permit the wide band transmission of the printed word (teletype), as well as the voices and images that person-to-person, person-to-group, and group-to-group communications and teaching will require. These latter needs could only be met by the installation of coaxial cable, microwave, or satellite. Any one of these latter systems of terminals would permit all terminals to

have unlimited access to data and information banks, and libraries wherever they might be. The systems would provide access to other computerized resources such as programmed instruction and systems of differential diagnosis as fast as they can be developed. Dr. Darley thought that all of these resources should be available by the time the programs he was suggesting could become operational.

Dr. Darley's proposal seemed to limit consideration to planning and program sharing in the interests of the various levels of physician education. This was because physician education is central to the function of the entire medical establishment. But once programs for physician education have been established, it is logical that the same framework could be used for the education of other health and medical personnel —particularly nurses, social workers, and many categories of technicians and assistants. Coordination between medical and auxiliary health education will prepare the health and medical care team for the interpersonal relationships essential to effective patient care. The objective of this proposal is to provide interstate coordination during the entire span of physician education—undergraduate, graduate, and continuing —so that patient care in the sparsely settled states will be more comprehensive and coordinated.

Finally, Dr. Darley called attention to the fact that, during the past four years, many reports have been developed that make a strong case for the objectives, concepts, and programs suggested in his proposal. But any action carrying out the recommendations of these reports is yet to come. He expressed the belief that the states of Idaho, Montana, Nevada, and Wyoming, by cooperating in an interstate educational program for health services, could move quite promptly toward the establishment of the full span of physician education.

## Chapter VI

# *CONCLUSION*

Successful medical education in the sparsely settled states can only be attained through regional cooperation. A mutual sharing of resources will bring quality to the needed educational framework and will result in a positive flow of health and medical manpower into these states. Such cooperation will be essential if these states hope to provide comprehensive health care for their residents.

Dr. Robert A. Aldrich, from the University of Washington, set forth four steps which he thought the leaders in Idaho, Montana, Nevada, and Wyoming should take now if they want dynamic and innovative medical programs:

1. Establish programs in medical education as soon as feasibility studies are complete.
2. Educate the public to understand and accept a program to cover the complete span of physician education.
3. Strengthen the behavioral and sociological sciences in institutions of higher learning.
4. Initiate, after full exploration, a program of interstate and inter-institutional cooperation.

Dr. George E. Miller, director of research in medical education, University of Illinois, further endorsed the concept of regional cooperation by declaring, "These states will not have quality medical education if they rely solely on their own resources. This could well be the right time to coordinate and implement the inter-institutional concept expressed by Ward Darley."

The consultants agreed that recent trends in regionalism have provided an acceptable climate for such cooperation. The impetus, however, must be generated from the local and state levels. A public concerned about the future health and medical care within each state must plan for health and medical manpower with positive vision. This manpower must consist not only of physicians but also of nurses and other health professionals. Once each state has a school of medicine, it would

not be difficult to develop strong educational curricula for auxiliary health personnel.

The consideration of the proposals within this document should provide an effective basis for a regional development of dynamic and high-quality medical education.

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